THE VETERINARY RECORD

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 25. JUNE 22, 1946 VOL. 58.

Fowl Typhoid

Certain Aspects of the Experimentally Produced Disease

By

J. E. WILSON,

MINISTRY OF AGRICULTURE AND FISHERIES, ESKGROVE, LASSWADE

Fowl typhoid was first recorded in Great Britain in 1888 by Klein (1889). The disease appears to have a more or less local distribution being endemic in certain areas, *e.g.*, in Wales and neighbouring counties of England and in some districts of the North of England, although sporadic outbreaks are encountered in other parts of the country. In Scotland, the disease is chiefly confined to parts of the West Highlands and to the islands off the north-west coast (Wilson 1940).

It is caused by *Salmonella gallinarum*, an organism possessing close relationship with *Salmonella pullorum*, from which it is serologically indistinguishable. The only method of differentiation of these organisms is their behaviour in litmus milk and in dulcitol and maltose. *S. gallinarum* gives rise to well marked late alkalinity in litmus milk and produces acid in maltose and dulcitol, whereas typical strains of *S. pullorum* do not attack either maltose or dulcitol. Atypical strains, however, occasionally ferment maltose or very rarely dulcitol. It will be apparent, therefore, that the difference between these organisms is a minute one; indeed, some workers consider that both represent identical species.

It is generally stated that fowl typhoid is most common in farms where somewhat primitive and unhygienic conditions prevail, being particularly prevalent on the type of farm where fixed hen houses, often stone-built with earthen floors, are in use, and where over-crowding, accompanied by infrequent cleansing of the houses, obtains. Outbreaks do occur, however, from time to time on farms run on modern lines where the standard of hygiene is high.

The factors which precipitate an outbreak are not always recognized, but in many cases over-crowding, sometimes of a temporary nature, is of importance, *e.g.*, a serious outbreak followed a spell of wintry weather when, due to snow, birds were confined to the houses for several days on end and in the only outbreak in turkeys I have seen the disease originated in a small pen in which "broody" turkey hens were isolated and which was over-crowded.

In investigating several outbreaks of fowl typhoid certain aspects of the disease appeared to require further consideration and the present paper describes experimental work carried out during 1942-43 in attempts to elucidate these points.

1. The apparent variation in virulence of *S. gallinarum*.
2. The spread of infection by contact.
3. The value of vaccination as a preventive measure.
4. The behaviour of "carriers" of *S. pullorum* when exposed to infection.
5. The agglutination test as a means of diagnosis of "carriers."

VARIATION IN VIRULENCE OF *S. gallinarum*

In natural outbreaks there appeared to be considerable variation in the virulence of the organism and this was shown to occur when attempts were made to set up the disease artificially. In some cases the inoculation of healthy fowls with relatively large doses of recently-isolated strains failed to produce evidence of disease; other strains produced symptoms of illness which were sometimes severe but deaths seldom resulted.

Biester and Devries (1943) state that agar cultures rapidly lose their pathogenic character; this was evident also from our experiments which showed that the virulence dropped considerably even after a single sub-cultivation and that a pathogenic strain may become avirulent after two or three sub-cultures. A culture, isolated from a cockerel which had been infected by contact, with naturally affected hens remained virulent, through repeated sub-cultivation for ten weeks, but this was exceptional.

It was shown that the virulence of a strain could be enhanced rapidly by passage through fowls, but it was usually necessary to kill the first bird of the series to be inoculated, when symptoms were evident. The increase in virulence by passage is well exemplified in natural outbreaks.

SPREAD OF INFECTION BY CONTACT

In this series of experiments identical pens were used, each having a floor space of 12 feet by 6 feet. The floors which were made of cement concrete were cleaned at infrequent intervals to allow for accumulation of infection and so to simulate the environment most favourable for spread of the disease under natural conditions. Infection was produced by survivors of a natural outbreak, all of which reacted to a titre of 1 : 320 and the healthy fowls used were Brown Leghorns except in the case of the *pullorum* "carriers."

The carriers of *S. gallinarum* were survivors of acute outbreaks obtained from farms which had had a clear test history for bacillary white diarrhoea. The *pullorum* carriers were carefully chosen from a flock, whose history was known, and the presence of *pullorum* infection was verified by bacteriological examination. Disease was also confirmed by the isolation of the organism from eggs laid by the carriers when under observation.

Experiment 1

A healthy Brown Leghorn cockerel was placed in a newly disinfected pen with eight "carriers" and died from acute fowl typhoid in seven days. A second cockerel introduced immediately following the death of the first died in eleven days after having shown symptoms of severe illness for several days before death. The culture obtained from the first cockerel was highly virulent, three out of four birds inoculated with it dying in six, seven and eight days respectively; the fourth bird was very sick but recovered.

Experiment 2

A Brown Leghorn cockerel, a Brown Leghorn hen and four *pullorum* "carriers" were placed in a pen with four fowl typhoid "carriers." The Brown Leghorn cockerel died after a period of illness but a bacteriological examination was negative. A second Brown Leghorn cockerel was then introduced and died from fowl typhoid after an exposure of 102 days.

Experiment 3

A Brown Leghorn cockerel and three Brown Leghorn hens were isolated with three "carriers" and remained healthy throughout the experiment which lasted for four months.

The results obtained from these experiments were in accordance with observations of natural outbreaks and suggested that the spread of fowl typhoid by contact required a high concentration of infection.

SYMPTOMS OF THE EXPERIMENTAL DISEASE

These do not differ materially from those observed in natural outbreaks. The first noticeable symptom was the appearance of a sulphur-yellow colouration of the droppings, which was very slight at first. In birds kept on wire floors, it was noted that in the early stages only a few yellow "splashes" were visible amongst the droppings which were otherwise normal and "formed." Later, as the consistency of the droppings became watery the alteration in colour was most marked, the excreta being entirely bright sulphur-yellow or with an additional greenish tinge; there also occurred inappetence, extreme dejection, and coma resulting in death. Thirst was marked in the early stages and the temperature in some cases reached 112°. Congestion of the comb and wattles followed by cyanosis was frequently noted, yet most writers describe an anaemia of the comb and wattles and suggest that this is a means of differentiating fowl typhoid from fowl cholera, in which cyanosis is usually a prominent feature. Birds which became comatose seldom recovered.

CHANGES IN THE BLOOD

Very marked changes were noted in the blood of sick fowls characterized chiefly by a severe leucocytosis. Myelocytes and other immature white cells were present and polymorphonuclear leucocytes in various stages of maturation were seen. There was a marked reduction in the red cell count and erythroblasts and many basophilic and immature erythrocytes were noted in blood films.

Post-mortem APPEARANCES

Lesions in the experimentally-infected fowl corresponded closely

with those seen in natural outbreaks with one notable exception; the "bronzed" liver described in text books and elsewhere was not noted in any case. Birds dying were examined almost immediately after death and the liver at that time presented an appearance similar to that found in many cases of leukaemia. It was enlarged and congested, being pinkish red in colour with paler areas. The colouration slowly changed and if kept for several hours the typical "bronze" appearance developed, suggesting that in some cases at least it is associated with *post-mortem* changes.

A striking feature in almost every case was the marked inflammatory changes in the intestines. In per-acute cases there was a haemorrhagic duodenitis and in the acute disease there was a reddening and swelling of the mucous membrane, sometimes extending throughout the entire length of the small intestine, accompanied by a reddish tinged gelatinous exudate. As in natural cases there was a distortion of the ovary indistinguishable from that occurring in cases of *S. pullorum* infection and in one case an "egg peritonitis" associated with *gallinarum* was noted.

Isolation of *S. gallinarum*

In acute experimental cases the organism was isolated from the blood, liver, spleen, lungs, kidneys, ovary or testes, oviduct, intestines and bone marrow. It grew readily on agar and McConkey media. It was recoverable from the ovary in the more chronic cases a considerable time after inoculation, and in the natural cases which were used as "carriers" of infection.

The yolks of about 100 eggs from natural and experimental cases were examined bacteriologically with negative results. In view of recent work by Wilson (1945), who showed that in the case of outbreaks of acute disease in chicks and ducklings due to infection with *S. thomson*, infection was introduced into the incubator by faecal contamination of the outside of the egg shells, it is unfortunate that the shells were not cultured as it may be that this is a possible source of some of the outbreaks occasionally met with in young chicks.

The Value of Vaccination as a Preventive Measure

Fowls inoculated with stock vaccine and others with autogenous vaccine (both composed of killed broth cultures), birds which had withstood infection in contact experiments, *pullorum* "carriers" and healthy fowls were used in a preliminary experiment. A culture obtained from one of the Brown Leghorn cockerels from the contact experiment was passaged through fowls and the period between injection and death was reduced to three days. After a further single sub-cultivation 1 ml. of saline washings corresponding in concentration to Brown's Tube No. 8 was injected subcutaneously into each bird, all of which were kept in cages with wire floors to obviate any possibility of added infection.

The results are noted in Table I.

Table I

Description of experimental fowl	No. inoculated	No. died of fowl typhoid
Healthy birds which had proved resistant to fowl typhoid in contact experiments	4	—
Fowls vaccinated with stock vaccine	2	—
Fowls vaccinated with autogenous vaccine ..	4	—
S. pullorum "carriers"	3	—
Healthy controls	4	2 (21 and 23 days)

As only two controls died and as the period between injection and death was fairly long, it was considered that the single sub-cultivation after passage had probably reduced the virulence of the organism and that although the surviving birds might have possessed some degree of protection, no real conclusions could be drawn. In passing, it is of interest to note that washings from an agar culture obtained from one of the dead birds was lethal for a healthy bird in two days; this is a further demonstration of the effect of passage on the virulence of the organism.

The culture obtained from the Brown Leghorn cockerel which had died after an exposure period of 102 days was passaged through a Cambar hen which died in ten days and was then inoculated into a Brown Leghorn cockerel, two Brown Leghorn hens, a Rhode Island Red hen and a Cross hen, which died in eight, eight, nine and 15 days respectively, the Cross hen recovering after a period of severe illness. A culture from the Brown Leghorn hen dying at eight days was sub-cultured and was used in the next experiment, all birds receiving 1 ml. of washings equivalent to Brown's Tube No. 8, subcutaneously. Fowls which had previously received a heat-killed autogenous vaccine, autogenous vaccine plus 1 ml. *S. gallinarum* culture which had become avirulent by repeated sub-cultivation, *S. pullorum* "carriers" and healthy controls were used.

The results are shown in Table II.

Table II

Description of experimental fowl	No. inoculated	No. died of fowl typhoid
Fowls vaccinated with autogenous vaccine ..	2	2 (4 and 9 days)
Fowls vaccinated with autogenous vaccine and later live culture	2	Remained healthy
S. pullorum "carriers"	2	"
Healthy controls	2	2 (6 and 8 days)

From these results it appeared that a heat-killed autogenous vaccine was not of much value as a protective agent by itself but that by the addition of a live culture it was effective in conferring immunity. *S. pullorum* "carriers" again remained healthy.

This experiment was repeated, and, while fresh birds were being vaccinated with stock vaccine, autogenous vaccine, and autogenous vaccine plus attenuated culture, the culture previously used was kept alive by subcultivation; it was again shown that virulence had been lost during this process, as three fowls inoculated with it, although they became sick, did not die. They were destroyed nine days after injection and a large dose (4 ml. Brown's tube No. 8) of the organism isolated killed a hen in three days. After two further passages, the virulence of the organism was restored, 1 ml. killing in six days. The prepared fowls were then inoculated, each receiving 1 ml.; the results are shown in Table III.

Table III

Description of fowl	No. inoculated	No. died of fowl typhoid and period between injection and death
Vaccinated stock vaccine		
Brown Leghorn male		5 days
Brown Leghorn hen		7 days
Brown Leghorn hen ..	4	3
White Leghorn hen		14 days
Autogenous vaccine		
Brown Leghorn hen		18 days
Brown Leghorn hen		9 days
Brown Leghorn hen	4	2
Brown Leghorn hen		
Autogenous vaccine plus live culture		
Brown Leghorn hen	4	0
Brown Leghorn hen		
Rhode Island Red hen ..		
Rhode Island Red hen ..		
Salmonella pullorum carriers ..	3	0
Healthy controls		
Brown Leghorn male		5 days
Brown Leghorn hen		
Rhode Island Red hen ..	4	2
Rhode Island Red hen ..		8 days

All the inoculated birds, except those which received autogenous vaccine plus live attenuated culture and two of the *pullorum* "carriers," were obviously ill, showing inappetence, sulphur-yellow diarrhoea, dejection, and even periods of coma. It seems highly probable that if they had been exposed to the variations of temperature and to the other conditions to which fowls kept under natural conditions are subjected they would have succumbed. The use of wire floors prevented any accumulation of infection to which birds would have been exposed in the field, but, on the other hand, the initial dose of organisms was probably considerably greater than that which might have been naturally acquired. It is of interest to note that only one of the *pullorum* "carriers" showed symptoms of illness, and in it the disease was milder and the diarrhoea was less profuse.

The experiments tended to suggest that the use of a dead vaccine, either autogenous or mixed, is of doubtful value, at least under experimental and somewhat unnatural conditions. This was not entirely unexpected as its use in field outbreaks evokes mixed opinions. In some cases good results appear to follow, but the preliminary testing, leading to removal of carriers may play an important part in limiting losses, and some of the credit ascribed to vaccination may thus be misplaced. In no case has a "carrier" of *S. pullorum* succumbed to experimental inoculation but the numbers are too small to eliminate the part played by "chance." It may be recalled, however, that Lambert (1933) showed that selection for resistance to pullorum infection resulted in a decided decrease in mortality from that disease and that some protection to fowl typhoid was also afforded.

The present experiments showed that the use of a live attenuated culture produced a solid and lasting immunity, but the general use of this method in the field could not be justified owing to the possibility of recovery and subsequent enhancement of virulence, which might result in a serious outbreak. In the event, however, of the occurrence of an outbreak which threatened to decimate a large and valuable flock, an owner, with a full knowledge of the underlying danger, might justifiably be prepared to run this risk.

Agglutination Tests

It was found that after vaccination with dead culture agglutinins were only rarely demonstrable; thus the use of this method of prevention should not complicate subsequent agglutination testing for carriers of *S. pullorum*. This is of particular importance in the case of flocks under the Accredited Scheme where annual routine testing is carried out.

Following the injection of a similar amount of live culture, agglutinins were demonstrable in six to seven days and gradually increased in amount up to about 14 days when a titre of 1 : 320 to 1 : 640 was commonly noted, even although no symptoms of illness had been shown. In birds which showed symptoms of the acute disease death frequently took place before the formation of agglutinins and it was concluded that in many cases the production of measurable agglutinins coincided with commencing recovery. The titre varies greatly in individual birds. In birds which have recovered from the acute disease after a period of severe illness and in some of the birds vaccinated with dead culture followed by injection with live culture the titre was very high, reaching 1 : 20,480 in several cases, and up to 1 : 40,000 in a single case. It is of interest to note that 1 : 320 is the highest titre encountered in any of our field cases but there is no doubt that much higher titres occur naturally. In some cases the titre tended to fall after a few weeks and in certain birds, both naturally and artificially infected, after a period of months agglutinins ceased to be demonstrable, and bacteriological examinations were negative. A number of birds which showed falling titres were destroyed, and a bacteriological examination of several which showed a low agglutinin level failed to reveal *S. gallinarum*. It would appear, therefore, that agglutinins may persist for some time after the elimination of the causative organism.

It has been suggested that it is important to carry out a preliminary agglutination test before vaccination in order to eliminate the possibility of vaccinating birds which are in the incubative stage of the disease, but it appears from our work that the test would not discern such birds. Agglutination tests should however, always be carried out as a routine procedure in order to eliminate "carriers" as a possible source of further infection.

Rapid Whole-Blood Test

This test if it proved reliable, appeared to possess certain advantages over the tube test, the chief of which perhaps was the speed with which it could be carried out after a positive diagnosis had been obtained in the laboratory. In addition, reactors could be eliminated immediately, thus avoiding the delay of several days which is inevitable in the case of the tube test. The rapid whole-blood test using *S. pullorum* stained antigen was, therefore, carried out in two natural outbreaks and the results were controlled by tube tests in the laboratory. Complete agreement to both tests was obtained. In addition, tests were carried out in experimentally affected fowls and these confirmed that the rapid whole-blood test was an accurate and efficient method of testing for fowl typhoid in the field.

As a result of the many comparative tests carried out, a rather striking and perhaps surprising fact became evident, namely that the speed of the reaction and the type and size of the clumps obtained in the rapid test in many cases bore little relation to the titre. Thus, birds which had been classified as "strongly positive" to the rapid test included samples of relatively low, medium and high titres. The converse was also true and poor reactions characterized ny slowness in development and fine granulation rather than floculation were noted in samples which had titres of 1 : 40, 1 : 2,000, 1 : 5,000 and in one case, 1 : 10,000 respectively.

In one of the natural outbreaks a number of "pin point" granular reactions were evident. These were considered to be insignificant and the tube tests were negative in every case. In a retest at a later outbreak several similar reactions were encountered and the fowls responsible for them were obtained for bacteriological examination, but in no case was *S. pullorum* or *S. gallinarum* recovered. It may be that sometimes such reactions represent early infection, with commencing agglutinin formation, but it does appear that a granular reaction can occur without pathological significance. This phenomenon is well known to all who have carried out rapid testing on a large scale. In some cases it is probably due to non-specific agglutinins and in others the presence of late lactose-fermenting strains of *B. coli* may be responsible. It appears in other cases to be associated with haemoglobin or some other substance present in whole blood, but not in serum, as it has frequently been noted that serum from a fowl, the blood of which shows this phenomenon, gives a completely negative result with stained antigen and in tube tests.

In testing a flock, therefore, in which fowl typhoid has been diagnosed care is necessary to differentiate this apparently non-significant reaction from that which might occur in a bird in the early stages of the disease, and it may be considered desirable in the interest of safety, to remove such cases from the flock, especially if they are few in number, or to isolate them, pending a further test.

Summary

1. *S. gallinarum* shows a marked variation in virulence and the inoculation of susceptible fowls with a recently isolated strain causing losses in the field may fail to reproduce the disease.

2. Virulence is lost by subcultivation but can be enhanced by passage.

3. The successful spread of fowl typhoid by contact requires a considerable concentration of infection.

4. The experiments tend to suggest that the use of dead vaccine, either mixed or autogenous, is of doubtful value, at least under experimental and somewhat unnatural conditions.

5. Recovered birds possess a solid immunity and birds vaccinated with dead culture, and later injected with live culture are resistant under experimental conditions.

6. In no case has a "carrier" of *S. pullorum* died from fowl typhoid, following injection or exposure, but the number used is too small to obviate the part played by chance.

7. There is a suggestion that some strains are more susceptible than others; *e.g.*, in the case of Dr. Greenwood's Brown Leghorns a shorter incubation period and a higher death rate were commonly noted.

8. The male birds used in the experiments invariably showed symptoms before the females and the proportional death rate was higher.

9. Although the organism was readily isolated from the ovary of both naturally and artificially infected hens, it was never recovered from eggs laid by "carriers" or recovered birds.

10. The rapid whole-blood test using *S. pullorum* stained antigen is a useful and accurate method of detecting "carriers."

11. The "degree" of reaction to the rapid test is not always a good indication of the titre, and care is necessary in differentiating between "pin point" or granular reactions of no pathological significance and those shown by positive cases of low titre.

References

Biester H. E., and Devries, Louis. (1944.) Diseases of poultry. The Collegiate Press, Iowa.

Klein, E. (1889.) Ueber eine epidemische Krankheit der Hühner, verursacht durch einen Bacillus—Bacillus gallinarum. (*Central f. Bakt.*) **5.** 689.

Lambert, W. V. (1933.) A preliminary study of the reaction of two disease resistant stocks of chickens after infection with their reciprocal pathogens. *Iowa Acad. Sci.* **40.** 231.

Wilson, J. F. (1940.) Fowl typhoid in Scotland. *Vet. J.* **96.** 53.

———. (1945.) Infected egg shells as a means of spread of Salmonellosis in chicks and ducklings. *Vet. Rec.* **57.** 511.

Blood Transfusion in the Bovine

R. W. Johnston, M.R.C.V.S.

Longside, Aberdeenshire

The war has brought blood and plasma transfusion into the limelight. In spite of the prominence given to the subject in the Press, there is no record that this method of treatment has been widely employed in veterinary practice, although blood transfusion is, in many cases, rational and highly practicable.

In this practice blood transfusion has been used with success in the following types of cases:—

(1) Post-parturient haemoglobinuria in cows.

(2) Haemorrhage.

In order to ascertain what precautions are required in blood transfusion the following experiments were carried out:—

Sera were obtained from 50 bloods collected from dairy cows, prime fat Aberdeen Angus bullocks and Irish cattle. These sera were tested against blood from some 170 bovines for agglutination between cells and serum. In no case was agglutination observed either macroscopically or microscopically.

In view of the above findings it was considered unnecessary to cross-agglutinate blood before giving a transfusion.

As a precautionary measure blood transfusion was carried out on five emaciated cows due to be slaughtered. Two litres of blood were used in each case. One such animal received a transfusion daily for seven days, the donor in each time being different. In no case was any adverse reaction observed *ante mortem* or *post mortem*.

Of course, each of those five animals could have been a universal recipient, or each of the donors a universal donor, but this seemed unlikely.

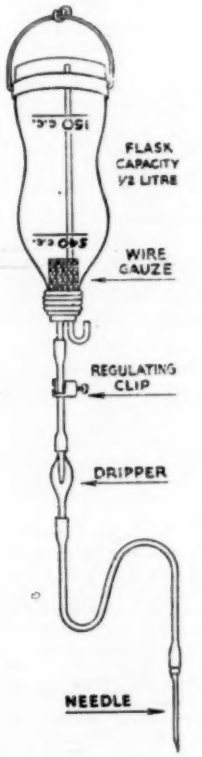
In post-parturient haemoglobinuria in cows, a large number succumb to the acute anaemia produced by a haemolysin of unknown origin. The danger period is usually when the urine begins to change colour to normal. In such cases the red blood cell count is in the region of two to three million per c.mm. and clinically

the signs of shock are present. Transfusion of two to three litres of citrated blood usually brings about a dramatic change for the better. If necessary a further two litres can be given the following day. In no case have I found a third transfusion necessary.

A case of haemorrhage treated was that of a bull calf which had been castrated by the owner and had been bleeding from the site of operation for some hours before veterinary help was sent for. On examination the animal was found to be in a collapsed state. Bleeding had ceased as it always does when a certain degree of shock is reached. Pulse very low volume. A litre of blood was taken from a cow in the herd and given intravenously to the calf. Half an hour later the calf rose of its own accord and from then on recovery was uneventful.

As regards methods used and apparatus (which is ideal for general intravenous work) a diagram is appended. The same bottle is used for collecting and giving blood, 180 c.c. of isotonic citrate are put into the bottle which is then filled to 540 c.c. with bovine blood. The bottle is then sealed with a screw cap. Blood can be obtained from any healthy animal in the same herd, or from fat stock during slaughter at an abattoir. Immediately before giving the transfusion the screw cap is removed and the cork complete with connections is inserted into the bottle and the bottle inverted. The clip is released and blood is allowed to run through the tubing in order to remove all air, and the clip is then closed. The needle is then inserted into the appropriate vein, tubing attached to needle and the clip adjusted to the rate of flow required. In a badly shocked case it may be necessary to pump the blood in under pressure with the clip fully opened.

Blood collected in veterinary practice must obviously be used as soon after collection as possible, as strict asepsis cannot be guaranteed.



WEEKLY WISDOM

The fundamentals of accurate diagnosis and good management are not as exciting as some new drug or treatment—but they are much more important.—M. E. BOYER (U.S. veterinarian).

CLINICAL COMMUNICATIONS

An Unusual Foetal Abnormality

G. M. DUNBAR, M.R.C.V.S.
ECCLESHALL, STAFFS

Subject.—Clun ewe, served by a Suffolk ram.

History.—The ewe had delivered one normal lamb without difficulty. As she continued straining and was making no progress, the shepherd examined her, and found a "jumble of legs" presenting.

Examination and Procedure.—I was then called in and, on examination, found four legs and one tail in the passage. Suspecting the presence of two foetuses I attempted to isolate one pair of legs. It soon became apparent that all four legs had the same attachment. It was decided to apply traction, and on doing so both sets of legs were easily delivered. The whole mass of the foetus was then removed by further traction without much difficulty. After inserting sulphanilamide (1 oz. in liq. paraffin) into the ewe's uterus she was turned away with her live lamb, recovery being uninterrupted.

Features of the Monstrosity.—Examination of the monstrosity revealed the following:—

There was one head, neck, thorax and abdomen. One set of normally placed forelegs; two sets of hindquarters, each complete with anus, vulva and hind legs—one set being dorsal and the other ventral; only one tail, attached to the dorsal set of hindquarters.

Attached to the sternum, and radiating from it, were four forelegs and one hind leg.

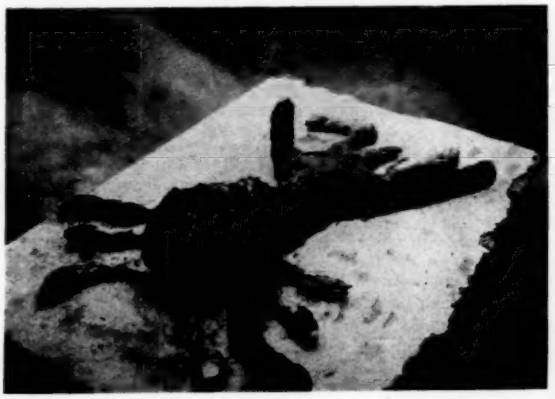
The abdomen was open, exposing the viscera.

The right eye socket contained three eye-balls, and on the left side of the face there were two eye sockets with one eye-ball in each.

. . . . . .

The foetal heart continued to beat for some minutes after delivery and strong respiratory attempts were made.

The total weight of the foetus was in the region of 12 lb.



* * * * *

Knitting Needle in the Oesophagus

HAMILTON KIRK, M.R.C.V.S.
LONDON

It seems to be the fashion now for cats to swallow long knitting needles. Mr. Franklin's "clinical" in the issue of May 18th reminded me of a case I saw some two months ago in which a medium sized cat was seen to be playing with a long, pink erinoid needle. Soon afterwards the latter could not be found; but the cat was making uneasy swallowing movements. With a gag in position nothing could be seen or felt in the mouth or pharynx and only after some time could a slight projection be appreciated half way down the neck. By oesophagotomy the point of the needle was located and withdrawn. The needle in this case was ten inches long, and had softened and conformed itself to the contour of the cervical and thoracic oesophagus. As seems usual, the head end was first swallowed; but it is hard to believe it possible for a cat to ingest the whole of a long, slender and smooth object such as a knitting needle.

Recovery was uneventful.

ABSTRACTS

[**Some Observations on the Poisonous Properties of Bracken** (*Pteris aquilina*). Shearer, G. D. (1945.) *J. comp. Path.* **55**. 290.]

Cases of fatal illness in cattle believed to be due to eating bracken have been recorded from time to time for the past 50 years, but up to date no substance, except tannin, to which poisonous properties could be ascribed, has been isolated from the plant. Several workers claim to have reproduced the symptoms ascribed to bracken poisoning by feeding large quantities of bracken, but others, feeding as large quantities, have failed to cause any signs of the disease in their experimental animals.

This paper records the results of an experiment in which two heifers were used for a feeding trial and includes some observations on the poisonous properties and chemical composition of the plant.

One heifer, fed a diet wholly composed of bracken, ate 915 lb. over 74 days and no signs of illness were observed till the 68th day. It was killed on the 74th day as it was in great pain. The *post-mortem* picture was that of a general toxaemia and in keeping with that recorded for bracken poisoning.

The second heifer ate 678 lb. of bracken in 78 days but in this case the bracken was only 50 per cent. of its ration, the rest being ordinary foodstuffs. This animal remained normal, showing no symptoms of poisoning and a *post-mortem* examination carried out on the 78th day revealed no pathological lesion.

Chemical analysis showed bracken to contain varying amounts of a catechol tannin but no other substance of known poisonous properties was found.

J. S.

* * * * *

[**The Clinical Use of Streptomycin: A Study of 45 Cases.** Herrell, W. E., & Nichols, D. R. (1945.) *Proc. Staff Meet., Mayo Clin.* **20**. 449-462.]

In the course of an investigation on the value of streptomycin in the control of various bacterial infections, three cases of undulant fever in man were treated. In two, which received 40,600,000 and 7,000,000 units respectively, the results were doubtful, since, although blood cultures became negative, the symptoms persisted.

In the third case, a veterinarian who had suffered from undulant fever for about a year and was showing positive blood cultures, a temporary improvement was effected under treatment. A relapse occurred when the drug was discontinued and an enlarged spleen containing large numbers of brucella was removed. A second course of treatment sterilized the blood stream. It is noted that in spite of prolonged treatment with streptomycin, the organism did not lose its sensitivity to the drug.

R. E. G.

"THE VERY FIRST STEP IN AMERICAN VETERINARY EDUCATION"

"When Robert Jennings chartered the first veterinary college in North America at Philadelphia in 1852, the number of graduate veterinarians in the United States (pop. 25,000,000) totalled around 50, all in the larger cities of the East. Its name was 'Philadelphia Veterinary College.' The project did not long survive, because practitioners protested against making more veterinarians on the familiar ground that there were already too many.

"Besides," continues the *Jour. A.V.M.A.*, "there were difficulties met in maintaining a competent faculty at little or no pay derived exclusively from the small tuition of the small number of students the college was able to enrol. Veterinary surgeons were few and, unfortunately, quarrelsome in the 19th century. There was no profession, in fact, to cultivate professional spirit and fraternity. The college closed after three or four years of hopeless effort, but nevertheless gave the country its first group of graduate veterinarians. Their names may never be known unless some curious enough veterinary historian scans the newspapers and farm magazines of the middle 1850's in the forlorn hope of finding them. The records of the college disappeared with the founding of the A.V.M A. which, until the 1890's, wasn't famous for the keeping of records.

"In 1855, Robert Jennings wrote: 'This is the dawn of a new era,' in the *American Veterinary Journal*, the first veterinary magazine in this country."

* * * * *

At the end of a lengthy debate on the respective merits or demerits of the Shire Horse, the Clydesdale and the Percheron, at the annual general meeting of the Shire Horse Society, consideration of cross breeding questions was left to the council.

REVIEW

[**Manual of Veterinary Clinical Pathology.** Second edit., by David L. Coffin, V.M.D. Published by Comstock Publishing Co., Inc., Ithaca, New York. Pp. 263, illustrated. Price $4.00.]

Far too few text-books are written on veterinary diagnostic methods and yet accurate diagnosis is the first essential of the veterinary art, and is usually the one hurdle over which the quack cannot jump. In recent years, this book of Coffin's is the third to appear and, in spite of its predecessors, it fills an important place in the literature, as it explains with such commendable clarity the practical everyday techniques of clinico-pathological diagnosis.

It does not aspire to being a treatise on differential diagnosis, a subject which could very well occupy a large volume unto itself. Doubtless many a pathological specimen (impossible of duplication) intended for transit to a laboratory, has been ruined and lost by ignorance of the proper method of its selection, collection and packing; thus if clinicians gain nothing more from perusal of this work than a practical insight into the correct methods, they will have profited immeasurably. Urine, blood and parasitological examinations are fully described, and there are sections dealing with diagnostic methods in bacterial, mycotic, protozoan and virus diseases. A chapter also is devoted to "Poultry and Game Bird Autopsy."

The author rather wisely emphasizes in some detail the correct use of a microscope, a matter which is peculiarly apt to be neglected and forgotten by many general practitioners. One small adverse criticism is justified and it is one which is unfortunately too commonly seen in medical works; it concerns the general index. When an item is followed by several page numbers one of these should be in heavy type to indicate it is the principal reference. As an example, in this book there is a reference to Johne's disease followed by four different page numbers. The reader has to turn to them all instead of going straight to the chief reference. The book is very well illustrated, handy in size, printed clearly on excellent paper, and cannot fail to prove a most valuable addition to any veterinary library.

QUESTIONS IN PARLIAMENT

Rations for Racehorses

Mr. Collick, Parliamentary Secretary, Ministry of Agriculture, states in a written reply that the number of horses of thoroughbred breeding stock and racehorses in training for which feeding-stuffs coupons were issued in April last was 8,353. The quantity of oats allowed in rations to such horses averaged 556 tons a month. In view of the commercial importance of the horse-breeding industry and especially of the export trade in bloodstock, the value of which would be seriously affected by a cessation of racing, the Minister of Agriculture is not proposing to divert this comparatively small quantity of grain to human consumption.

A big demand from the Continent for heavy horses in the near future was forecast at the annual meeting of the Norfolk County Suffolk Stallion Society, when it was reported that membership had fallen from 529 to 399 and a loss of £201 had been incurred on the year (£2,688 paid out for hire of stallions and shares of fees).

* * * * *

A hundred and seventy thousand horses will be slaughtered to feed the Japanese people in 1946, the Japanese Government estimates in a report submitted to the U.S. occupation authorities. The number will include military horses considered unfit for farm work.

* * * * *

In a survey of the world's cattle situation the United States Department of Agriculture's Office of Foreign Agricultural Relations reports that cattle numbers have decreased in North America and Europe, and increased in the Soviet Union since the beginning of 1945.

The drop in North American cattle is placed at 2,000,000 and the European decrease at 6,000,000. The increase in the Soviet Union is estimated at 3.700,000. Little net change in the cattle population is reported elsewhere in the world.

* * * * *

When you control the movement of the affected or exposed animal, you control tuberculosis.—Dr. A. K. Kuttler (U.S.A.).

* * * * *

Veterinarians have failed to appreciate the potency of their political force and responsibilities.—Senator Lantz.

NOTES AND NEWS

Diary of Events

June 27th.—R.C.V.S. Written Examinations begin.
June 27th.—Meeting of the Derbyshire Division, N.V.M.A., at the Midland Agricultural College, Sutton Bonington, 2 p.m.
June 28th.—Meeting of the North of England Division, N.V.M.A., at Newcastle-upon-Tyne (King's College), 1.30 p.m.
June 28th.—Meeting of the Midland Counties Division, N.V.M.A., at Birmingham (Grand Hotel), 2.30 p.m.
July 1st.—R.C.V.S. Oral and Practical Examinations commence.

Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

* * * * *

PERSONAL

The Birthday Honours

Notable Awards to Dr. Russell Greig and Captain Ulric Walker

The King's birthday, which falls on December 14th, was officially celebrated on Thursday of last week: the day after we went to press with our last issue. We regret, therefore, the necessarily somewhat belated reference to the awards conferred upon veterinarians and some others in the Honours List issued on the occasion. It was, in fact, the most interesting and varied for some time, and the customary meagreness of the allowance of honours to members of the profession was at least mitigated by two high distinctions.

On behalf of his colleagues in the profession congratulations may first be expressed to Dr. John Russell Greig, PH.D., M.R.C.V.S., F.R.S.E., Director, at the Moredun Institute, of the work of the Animal Diseases Research Association, who receives the C.B.E. in the Order of the British Empire. This recognition of his labours in the field of veterinary research comes to one who was appointed Director of the Moredun Institute in 1930, to which post he succeeded after holding the Professorship of Medicine at the "Dick" College from 1919. Prior to that his main concern was work with the Ministry, with the exception of his period of service during the first Great War as an officer of the R.A.V.C.

Great pleasure, too, will be afforded by the conferment of the C.I.E., in the Order of the Indian Empire, upon Captain Ulric William Ferrier Walker, M.C., M.R.C.V.S., Director of the Veterinary Department of the Punjab. Captain Walker served with the R.A.V.C. as a regular officer during the Great War of 1914-18. He then joined the Indian Veterinary Service, in which he has worked ever since. As Director of the Veterinary Department he is head of all the veterinary work in the Punjab, including that of the Punjab Veterinary College. The great Hissar Cattle Farm—probably the largest in the world—is in his charge, and he had a great deal to do with the success of the All-India Show which was inaugurated by Lord Linlithgow in 1937. A colleague who visited the Punjab in 1938 bears witness to the splendid work performed by Captain Walker in developing the veterinary services of the Punjab, as a direct result of which the reputation of the Veterinary Department stands very high in the eyes of the Government of the Province.

Two additional names of members serving overseas are contained in the Colonial Office List, the O.B.E., in the Order of the British Empire (Civil Division), being awarded to Mr. John de Meza, M.R.C.V.S., Chief Veterinary Officer, Nyasaland, and to Mr. Godfrey Butler Simmins, M.R.C.V.S., D.V.S.M., Chief Veterinary Officer, Palestine, while we are glad to see the bestowal of the counterpart in the Military Division to Colonel George Barrett, M.C., of the Royal Army Veterinary Corps.

We would tender our congratulations, also, to Mr. J. A. McGilvray, Secretarial Head of the Animal Health Division, Ministry of Agriculture and Fisheries, on the award of the C.B.E., and to Mr. J. C. F. Fryer, Secretary of the Agricultural Research Council, who receives the K.B.E.

* * * * *

Appointment.—Mr. E. G. White, PH.D., B.SC. (VET. SCI.), B.SC. (PHYSIOL.), M.R.C.V.S., is joining the staff of the Rowett Research Institute, Bucksburn, Aberdeenshire, in August, as Pathologist. Dr. White is at present Reader in Pathology at the Royal Veterinary College and Senior Assistant in Pathology at the Research Institute in Animal Pathology. He has been a member of the College and Institute staff since October, 1935.

Birth.—CLARKE.—On June 10th, 1946, at Surbiton Hospital, to K. R. and M. Harvey Clarke, M.R.C.V.S., a daughter—Rachael.

* * * * *

Death of Lady Hobday.—The many members of the profession who held in affectionate esteem Lady Elizabeth Hobday, widow of Sir Frederick Hobday, C.M.G., F.R.C.V.S., F.R.S.E., the late Principal of the Royal Veterinary College and outstanding surgeon, will learn with deep regret of her death which took place on June 11th.

* * * * *

D.Sc. for Dr. R. Lovell.—The University of Manchester has awarded the degree of D.Sc. to Dr. Reginald Lovell, PH.D. (LOND.), M.SC. (VICT.), M.R.C.V.S., D.V.S.M. (VICT.), Deputy Director, Research Institute in Animal Pathology, Royal Veterinary College. This degree is granted for published work.

* * * * *

Marriage.—FITZPATRICK—HOLMES.—On June 11th, 1946, at Leicester, R. J. Fitzpatrick, B.SC., M.R.C.V.S., only son of Mr. and Mrs. J. Fitzpatrick, of Sidcup, Kent, to Ruth Holmes, B.A., only daughter of Mr. and Mrs. Herman Holmes, of Leicester.

* * * * *

Forthcoming Marriages.—HASTIE—BOURNE.—The engagement is announced between Peter Stewart Hastie, M.R.C.V.S., of Barrow Hill House, Ashford, Kent, only son of Mr. and Mrs. R. L. Hastie, Cathkin View, Rutherglen, Scotland, and Pamela Doris, daughter of Mr. and Mrs. W. J. Bourne, Drayson House, Woodchurch, near Ashford.

* * *

THOMSETT—LAY.—The engagement is announced between Lovell Robert, only son of Mr. and Mrs. E. L. Thomsett, of 1, Lingwood Gardens, Osterley, Isleworth, and Edith Mary (Babs), only daughter of Mr. and Mrs. H. Lay, Whitehill, Goring-on-Thames, Oxon.

* * * * *

Guide for N.V.M.A. Members Officiating at Greyhound Racecourses

N.V.M.A. Publications No. 9, "Guide to Veterinary Surgeons Officiating at Greyhound Racecourses," has been issued and members of the profession holding an N.G.R.C. licence will shortly receive a copy.

Any other member of the Association who is connected with Greyhound Racing or to whom this publication would be useful can obtain a copy on request from the General Secretary, N.V.M.A., 36, Gordon Square, W.C.1.

* * * * *

VICTORIA VETERINARY BENEVOLENT FUND

IN MEMORY OF DR. FRED BULLOCK

FIFTH LIST.

Donations gratefully received from:—

Mr. R. A. S. Coulter and the National Veterinary Medical Association:

	£	s.	d.
Amounting to	7	7	0
Previous Lists	158	18	6
Total to date ...	£166	5	6

June 12th, 1946.

* * * * *

ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

FOOT-AND-MOUTH DISEASE:

Norfolk.—Hall Farm, Boughton, King's Lynn, Norfolk (June 16th); The Poplars, Boughton, King's Lynn, Norfolk (June 13th).

SWINE FEVER:

Ayrshire.—Coylton, Ayr (June 17th).

Essex.—Arch Cottage, Colchester Road, Wix, Manningtree, Essex (June 15th).

Glos.—Marfurlong Farm, Ebrington, Campden, Glos. (June 11th).

Lanarkshire.—Lochend House, Lambhill, Glasgow, N. W., Lanarks. (June 18th).

Lincs. (*Kesteven*).—High Street, Castle Bytham, Grantham, Lincs. (June 17th).

Yorks. (*E.R.*).—Ivy Cottage, Hutton Cranswick, Driffield, Yorks. (June 18th).

* * * * *

DEVELOPMENT OF VETERINARY SCIENCE

ADVOCACY OF "CORPORATE BODY" SYSTEM IN PREFERENCE TO DIRECT GOVERNMENT CONTROL

In due course we shall be publishing the addresses delivered to the Section of Veterinary Hygiene at the Health Congress of the Royal Sanitary Institute held at Blackpool early in the month.

In the meantime it may be recorded that in the course of his presidential address to the Section, Professor J. G. Wright, F.R.C.V.S., of the Liverpool University School of Veterinary Science, declared that no service, the success of which depends so largely on industrial initiative, should be under direct Government control.

"While a rigid system may be eminently suitable for the collection of income tax," he said, "it fails where unhampered scientific progress is required, particularly when the application of that science is mainly a rural pursuit.

"Decentralization allows of that greater flexibility necessary to meet local requirements. Moreover, it makes for healthy competition and a discovery, exploitation and reward of talent and industry."

He believed that control should be vested in a corporate body appointed by the Government under the directorship of a veterinarian, on which all the interests in the service should have representation. Regional organizations should be the backbone of the scheme.

For the full development of a professional project in the highly organized society of to-day, there must be some measure of control. Many farmers would say: 'More inspectors? We have too many already.' To them I would answer: 'Your gain and the country's gain from the organized control of disease in your herds will more than repay for the inconvenience caused'."

Bovine Tuberculosis

A paper on "The Tuberculin Test and the Control of Bovine Tuberculosis" was presented by Mr. John Francis, B.SC., M.R.C.V.S., of Imperial Chemical Industries, Ltd., and the Section resolved to urge the Ministry of Agriculture to give high priority to the eradication of the disease. It was generally agreed that if further progress is to be made in the eradication of tuberculosis from our herds, Britain must begin to establish tubercle-free areas in the country. The Section also demands that the Ministry should replace the double intradermal tuberculin test by the single test.

The Section also discussed a paper by Mr. Horace Thornton, B.V.SC., M.R.C.V.S., D.V.H., Chief Veterinary Officer, Newcastle-on-Tyne, on "Pathology in its relation to Meat Inspection."

* * * * *

SHOULD THE TEACHING FACULTY DO RESEARCH?

In its issue of June 22nd, the *North American Veterinarian* makes the following comment on the above question:—

The current drive for funds to stimulate graduate study by veterinarians makes it timely to examine the question of research by veterinary college faculties. Even though this question has been debated and discussed, there has been little factual information for guidance. It is generally recognized that the teaching faculties are overloaded with students and have little time for research. Thus, it may be possible that considerable reorganization may be required if research is to constitute an active part of the programme of the teacher.

We are assisted in the consideration of the question by information obtainable in the field of human medicine. A. E. Casey (*Science*. **96**. 110-111. July 31st, 1942) has made an exhaustive study of medical school teaching and research activity. He was greatly assisted in this study by the fact that medical graduates may take national board examinations as prerequisites for licensure. This examination, which is compiled by leading men, provides an opportunity to determine how well informed the recent graduate is with respect to the existing status of medical knowledge. Because the examination is redrafted each year it is constantly up to date, and a graduate who passes the examination demonstrates that he has the very latest information at his disposal for practising medicine. In view of the fact that text-books are relied upon extensively by students, the ability to pass the national board is a good indication of how well the professors are able to guide the students into collateral reading of the best medical journals. Thus, failure to pass the national board examination is indicative of inadequate instruction.

Casey's analysis shows that the student trained in a medical school which has a faculty active in research is more likely to pass the national boards than a student trained in a medical school where the research output is exceedingly low. This indicates, therefore, that teachers who do research keep abreast of progress much more completely than do those who spend most or all of their time in class work.

Although the veterinary profession does not have a national board examination which would permit a similar comparison, the results of the above-mentioned analysis are sufficient to justify action on the part of veterinary college faculties.

It has often been said that a good teacher may be a poor research man and a good research man may be a poor teacher. Debating this question from the standpoint of a single individual is unprofitable. In view of Casey's findings, that there is a general relationship between the research activity of the faculty as a whole and the adequacy of training of undergraduate candidates. Thus, the problem must be considered from its broadest point of view, which involves the premise that each teacher should do some research.

Individual initiative is of tremendous importance for a research man. This is well illustrated by the accomplishments of Louis Pasteur and others who were gifted with such a keen intellectual curiosity that they successfully overcame all impediments and handicaps in seeking the truth. The progress that has been made during the past three-quarters of a century has been such, however, that a young man fired with enthusiasm and intellectual curiosity will be seriously handicapped in undertaking research unless he is privileged to benefit from that which has gone before by studying in the graduate school where he receives the guidance of various specialists and thus is enabled, in a period of three or four years, to gain familiarity and critical judgment with respect to the many branches of science which are contributory to medicine.

The veterinarian who undertakes clinical research is handicapped unless he is thoroughly trained in physiology, biochemistry and pharmacology, as well as in bacteriology and pathology, which he may consider are more directly related to the problem in question. Ketosis provides an excellent example. It is known from the practical standpoint that the ketone bodies in the blood are present in excessive amounts and that the blood sugar is low, and that improvement will result from the administration of glucose. While this amount of information may help the practitioner, the research man is interested in the aetiology of the disease. In order to study the aetiology, he must understand the metabolism of both carbohydrates and fats. When the aetiology has been solved, the practitioner should then be able to offer his client something more than symptomatic therapy.

Many members of the veterinary college faculties have had advanced training or have done some research. It is apparent that those who are qualified should have more time to expand their research activities. To accomplish this, the faculties should be enlarged and, thus, many openings would occur to absorb veterinarians, trained under the sponsorship of the Research Council of the A.V.M.A. Thus, the undergraduate students would receive the benefit accruing from the advanced training given to the men taking advanced degrees.

In the event the veterinary college faculties are not enlarged, one can expect that many of the veterinarians who receive the advanced training will be absorbed by experiment stations and by industry. Those going to the experiment stations will devote their efforts largely to research and thus contribute to the general fund of knowledge. Whether or not the undergraduate students will benefit greatly from this increased knowledge will depend largely upon how well the full-time teacher keeps up with current publications, including not only those papers that appear in the regular veterinary journals but also those in the animal sciences, the fundamental sciences, and with the experiment station bulletins which are frequently used to report results.

The benefits to be derived as a result of some of the men joining commercial organizations will vary considerably, depending upon the policies of the companies and the type of responsibility assigned to these men. Some companies with a broad point of view permit men on their research staffs to undertake fundamental as well as applied studies, but too frequently the research man's activities are restricted in scope. Here again, the undergraduate veterinarian will benefit in proportion to the extent that the teacher keeps abreast of the results that are published.

The foregoing analysis shows the desirability of encouraging the expansion of veterinary faculties to a point where most faculty members are actively participating in research. The veterinary practitioner may well ask why he is being solicited for funds to encourage graduate education, since the above analysis does not indicate how he might benefit from extending such support. The practitioner's benefit will accrue as new information is acquired and reported in the veterinary journals and, perhaps even more important, he will have an opportunity to hear active research men present their findings at State and national meetings and thus acquire knowledge directly from them.

* * * * *

LEGAL NOTES

Dogs Eat Poisoned Meat Meant for Foxes.—The deaths of ten dogs led to the appearance at Pocklington magistrates' court of Wilfred Hutchinson, gamekeeper, of Kilnwick Percy estate, who was summoned for laying poisoned meat, exposed to domestic animals.

Mr. J. P. Cook, M.R.C.V.S., of Market Weighton, held a *post-mortem* examination on one of the dogs and sent the contents of the stomach to the Royal Veterinary College, Edinburgh, which revealed the stomach contents were mutton poisoned with strychnine.

Det.-Sergt. Tate said he visited Hutchinson's home on April 28th,

respecting ten dogs which had died, and he denied all knowledge of the incident. Later Hutchinson made a further statement, in which he said he wanted them to know all he knew of the unfortunate dog incident. Mr. Simpson, one of the farmers on the estate, was losing lambs, and it was suspected they were being worried by foxes. Hutchinson had put the poison down to kill the foxes and clean up the estate from vermin.

For the defence, Mr. Crombie (appearing for Hutchinson, who pleaded not guilty) said Hutchinson did not deny laying the poisoned meat. It was put down with the intention of poisoning foxes. He had no reason to believe that dogs would frequent this place.

Mr. D. G. Hoare, the presiding magistrate, said the Bench did not consider Hutchinson had taken reasonable care, and had laid the poison too near the town. A fine of £5 and 35s. costs was imposed.

* * * * *

INFERIOR BEASTS AT SALES

The West Midland Shorthorn Association, at their annual meeting at Worcester, passed a resolution that more drastic and effective action be taken by the Shorthorn Society against breeders to prevent animals of inferior type and conformation being entered in the Society's shows and sales.

Mr. R. J. S. Taylor (Warwickshire) described the sending of bad cattle to sales as a scandal and damaging to the breed. Foreign buyers and young new members were misled into buying scrub animals. Mr. T. Nellist Wilks (Bewdley) said that less experienced breeders took it for granted that animals at these sales were worth buying.

Captain P. H. Stallard (Worcestershire): The answer is to send the screws home.

Mr. W. Nixon (representing the Shorthorn Society) said the matter had been considered by the council. It was suggested that if a breeder sent an indifferent animal he should be warned and succeeding animals inspected before being sent. That was considered too drastic.

* * * * *

RECORD OUTPUT OF MILK

More milk for sale—1,238,000,000 gallons—was produced this year than ever before. In stating this at the annual meeting of the Milk Marketing Board Sir Thomas Baxter, the Chairman, said that the trend towards winter milk production continued. Before the war milk was always in the shortest supply in December, but last December 20 per cent. more milk was produced and sold than in the first December of the war. There were indications that this year we should see, for the first time, December milk production exceeding that of August or September.

* * * * *

PRESERVATION OF NATURAL AMENITIES: NEED FOR A COMPREHENSIVE MEASURE

Mr. Lewis Silkin, Minister of Town and Country Planning, speaking at a luncheon organized by the Society for the Promotion of Nature Reserves, said that the realization of the beauty and interest of nature was a vital corollary to the planning of towns. A battle, however, still remained to be fought with industry, which had a tendency to override all aesthetic considerations.

The interest now being shown in national parks, he said, marked a big step forward, and he was looking forward to receiving, perhaps this autumn, the report of the National Parks Committee, presided over by Sir Arthur Hobhouse. The problem of the preservation of wild life was not confined to national parks, and his regional planning officers were making full use of the work of the local committees of the Nature Reserves Investigation Committee, of which Sir Lawrence Chubb was Chairman. The specialized work of caring for wild animal and plant life needed expert scientific advice.

It would be a fine thing if a comprehensive amenity measure could be passed through Parliament, dealing with national parks, nature reserves, control of advertisements, preservation of footpaths, and access to wild country.

* * * * *

WORLD FEDERATION OF PRIMARY PRODUCERS

At the close of the International Conference of agricultural producers in London the Provisional council, which was appointed to take steps towards formation of the proposed World Federation, held its first meeting. The Council appointed Mr. James Turner, President of the National Farmers' Union of England and Wales, as the first President of this World Federation. Three Vice-Presidents, representing Netherlands, Canada and France, were appointed. On the executive committee are representatives of India, Australasia (Mr. R. C. Gibson), and Denmark.

It is hoped to hold the first general meeting before the end of May next year. In the interval the executive committee will approach F.A.O. to obtain official recognition of the Federation at the next general assembly of that governmental organization.

* * * * *

CENTRAL ADVISORY WATER COMMITTEE

The Minister of Health has appointed a Committee with the following terms of reference: "To advise the Minister of Health, or any other Minister concerned, upon matters connected with the conservation and use of water resources; on the amendment of enactments which relate to, or in any way affect, the conservation or use of water resources or the provision of water supplies; and on any question that may be referred to the Committee by the Minister in connection with the operation, or proposed amendment, of relevant enactments." It will also consider the operation of any such enactments, and, where it thinks fit, make recommendations for their extension or modification. Any communication concerning the work of the Committee should be addressed to the Secretary, Mr. M. R. P. Gregson, at the Ministry of Health.

* * * * *

Mr. A. L. Mullen, M.R.C.V.S., D.V.S.M., Divisional Inspector, Ministry of Agriculture and Fisheries, will contribute the first paper to be discussed at the sessional meeting of the Royal Sanitary Institute to be held at the Town Hall, Middlesbrough, on Saturday, June 22nd, commencing at 10.30 a.m. His subject will be "Veterinary Inspection of Dairy Cattle in connection with Disease in Human Beings."

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

* * * * *

VETERINARY SERVICES EMOLUMENTS IN NEW ZEALAND

Sir,—I shall be glad if you will enable me to correct an error which appeared in the correspondence columns of your issue of January 12th, 1946, respecting the above. I am now advised that the "cost of living" allowance of £13 applies only to civil servants and not, as stated, to appointees to the Federation of Farmers' Veterinary Service, to whom no such allowance is payable on any salary.

May I also mention the existence in connection with the New Zealand Veterinary Association of an "Appointments Committee" which can be consulted upon questions affecting conditions of service in the Dominion. Enquiries may be addressed to the Hon. Secretary, New Zealand Veterinary Association, Animal Research Station, Wallaceville, Wellington.

Yours faithfully,

H. A. Reid.

New Zealand Government Offices,
415, Strand, London, W.C.2.
June 14th, 1946.

* * * * *

R.C.V.S. COUNCIL ELECTION

Sir,—May I, through the medium of your columns, express my thanks to those members of the profession who recently voted in favour of my re-election to the Council of the Royal College of Veterinary Surgeons?

Owing to the postponement of elections during the War, I have served continuously for eight years and it was thus high time that the profession had the opportunity, if it thought necessary, of repudiating me. During that period education has been the dominant subject in veterinary affairs and as in all my actions, both as a Councilman and as a teacher, I have striven to put into effect the recommendations of the Inter-Departmental Committee on Veterinary Education, it is heartening to know that the majority of those who voted still have confidence in me.

Yours faithfully,

J. G. Wright.

The University of Liverpool,
Veterinary Field Station,
"Leahurst," Windle Hill,
Neston, Wirral.
June 11th, 1946.